Syncrude

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PRESIDENT PRAISES PERFORMANCE OF SYNCRUDE, BECHTEL STAFFS

"Skillful co-ordination by Canadian Bechtel in bringing together the good supply of construction labour with the necessary materials and equipment to maximize productivity was a major factor in keeping the project on schedule," said President Brent Scott in a review of the past half-year's progress.

"Although the winter was mild, the weather still presented many challenges which Canadian Bechtel and the construction crew responded to extremely well."

The unexpectedly good labour supply he attributed to economic conditions elsewhere in Canada and the generally low ebb of construction across the country. "This made available many more skilled workers than we anticipated. As a result we were able to fill our needs completely from sources within Canada."

In fact, all labour requirements over the course of the year have been met with a total workforce at the site reaching almost 8,000 this summer. "When you consider the many problems involved with co-ordinating a workforce that size — as well as providing food, lodging and entertainment for over 6,500 people — you realize what a monumental task this is."

Over ten per cent of the total project manhours are being expended at the Edmonton pre-assembly sites, where at peak about 1,000 were employed at four locations. Activities here included prefabrication of construction modules, double-ending of pipe, production of electrical conduits, concrete formwork and other partially-assembled units to be shipped to the main project site by truck.

In management's view, there have been several significant benefits to the establishment of the Edmonton sites. They ensured a stable work force and provided a controlled environment which contributed to efficient output. The arrangement also eases pressure on construction camp capacity and transportation.

The president highly commended Syncrude's construction supervisory staff. "Their ability to identify and react to problem areas minimized schedule delays, particularly with respect to dragline construction and the building of the utility plant. In fact, we're enthusiastic about progress to date in both scheduling and control of the total project."

"We also feel we're tracking very closely to forecast costs," Brent added.

He noted that an "excellent job has been done in readying equipment for commissioning and by Syncrude's Operations people in eliminating the bugs and getting equipment operating. The successful transition from Bechtel's block planning to Syncrude's systems planning is also considered a major achievement.

The record of recruitment of personnel for the operating phase of the project is a satisfactory one. "We're very close to achieving a highly demanding and difficult schedule for assimilating and training people."

Brent praised the ability of Northward Developments Ltd. to meet its housing construction schedule and the patience and determination of Syncrude members who are living under adverse conditions until their new housing is ready. "There's no doubt about it," he adds firmly, "there have been problems with housing, but Northward is getting the job done under difficult circumstances. Fortunately, most of our people have been ready to accept the fact that it takes time to prepare and provide adequate accommodation for a staff which is growing so quickly."

Because of its deep involvement with Fort McMurray, Syncrude is very much concerned with the pace of community development. It's obvious the provision of school, medical, recreation and shopping facilities must be accelerated to keep pace with the rapid population increase. A successful example of timely development is the government approval of expansion of the hospital to 300 bed capacity.

Syncrude's Community Relations Office has provided funds to many individuals and organizations to assist them in contributing to community recreational and cultural expansion. Facilities to house leisure and recreation activities have also received financial support from the company.

Brent emphasized the excellent support being provided to Operations and Projects by the Research, Engineering and Environment Departments. "The people in these teams have done an outstanding job in anticipating problems associated with start-up. They have to look into the future to foresee and forestall any difficulties associated with expansion and de-bottlenecking."

Syncrude's Native Hiring and Training Program, a continuing activity for the life of the project, has mobilized at a modest pace but is accelerating. The groundwork has been laid for a collaborative effort between Syncrude and the Indian Oil Sands Economic Development Corporation whose aim is to help develop native companies which will be able to bid on project sub-contracts.

Brent Scott has no illusion about the existence of problems. "Any organization which has to achieve the size we do, in the time we have to do it in, is bound to have growing pains. We're no exception. But, even as we grow, we can see the different departments beginning to mesh, to support each other. Individual effort and increasing teamwork are combining to create a sense of purpose and achievement which is rapidly gaining momentum. We all have a common goal, to see the Syncrude Project in operation and highly successful."

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NATIVE PROGRAM . . .

COURSES PROMOTE CROSS-CULTURAL UNDERSTANDING

Syncrude's commitment to offer permanent employment to qualified native people has created the need for both native employees and non-native supervisors to explore each other's customs and attitudes. Indeed, it can only succeed with this broader understanding.

The Native Cultural Program — a 12-hour Syncrude course designed to promote better understanding and appreciation of native employees and their problems, has now been offered in whole or part to more than 50 of the supervisors it's intended to reach.

And since understanding is a two-way process, a similar cultural program for native employees is now being prepared. It's intended to inform natives of the differences in values, attitude and behavior between native people and "mainstream" society, which they can expect to encounter in an industrial setting.

There has been some difficulty in organizing the program around employees' shift work, explains Native Programs Assistant Herb Callihoe, who said he expected the program to get under way this summer.

In the meantime, counselling services have been provided to native employees. Plans are now underway to increase the number of counsellors and broaden the service. A family counsellor is available to help newcomers and their families get settled in their new surroundings.

As of July, 96 native persons were involved with the Syncrude project. Of these, 37 are in trainee positions, 24 are technicians, 17 are in clerical jobs, six fill administrative positions and 12 are in various training programs.

According to Herb, an increasing number of native applicants have their grade 10 — the minimum requirement for Syncrude. He estimates that 60% of those applying for work now meet this qualification. Eight candidates are upgrading their academic standing to this level. When they have completed grade 10 they will be offered jobs with the company.

But even without Grade 10 standing, native candidates may still have a chance to work at Syncrude — if a proposed plan to upgrade educational qualifications is adopted.

"We are now working on a pilot project to help people of native background, who lack the required education but have some operational skills, to upgrade their education after hiring. The scheme would initially be limited to 12 people who would be taken on staff on the understanding that they upgrade their education to at least the grade 10 level."

The total absence of Indian students in scientific or technical courses at the post-secondary level in this province is of concern to the company. Although Native Affairs officials note that more natives are getting advanced education, they point to statistics issued by the Department of Indian Affairs which show that, of the total of 40 Indian people now in Alberta universities, all are enrolled in arts, social sciences or education.

In order to stimulate the hiring of native women for secretarial positions, a Native Secretarial Upgrading Program has been launched. Aimed at native women who already possess the necessary secretarial or stenographic skills — but perhaps lack the experience and social skills to cope with an industrial environment — the program provides for a "buddy system" in which the newcomer receives tutoring from a senior secretary already on staff.

Making sure that native graduates of secretarial programs are aware of the opportunities offered by Syncrude, is also a function of Native Programs. The staff recently completed a survey of seven educational institutions in northeastern Alberta with a view to hiring girls who have completed secretarial courses.

Like others involved in Native Programs, Herb Callihoe is puzzled over the pattern which has emerged in native staff turn-overs. "It's rather curious that the turn-over doesn't occur shortly after hiring," he says. "Rather, it tends to happen between the third and sixth month of employment and we don't exactly know why." One possibility, he says, is the workers' lack of familiarity with full-time industrial employment as opposed to seasonal work.

He adds the challenge has now gone beyond simply hiring native people whenever possible. "Our goal is to help them make the transition as easily as possible from what has likely been a common rural lifestyle to an industrial society — individualistic, aggressive and competitive — something foreign to the native way of thinking."

Native members of Syncrude's staff receive counselling service to help them settle into their new surroundings.

MANPOWER PLANNING & RECRUITMENT . . .

SYNCRUDE STAFF REACHES 2,100

"Oldtimers" with the company, who recall the day when they recognized every staff member, would be hard-pressed to make the same claim today.

By the end of July, staff numbered 2,100 — an increase of 900 in a seven-month period.

The fact that 550 now work in Edmonton, compared to 1,550 at Fort McMurray, reflects the shift in Syncrude's hiring emphasis from Administrative, Professional and Technical categories to Occupational — the skilled operating personnel now most in demand.

Dave Simmonds, Manager, Manpower Planning and Recruitment, outlines a change in procedure implemented in recent months. The company has begun to integrate its recruitment activities more closely with the facilities of Canada Manpower.

In the past, the practice was to accept applications from anyone, anywhere, screen them, and then have those with potential for Syncrude come in for interviews.

The present arrangement with Canada Manpower is considered less cumbersome and time-consuming, Dave explains. Interviews are now conducted in facilities provided by the government agency, which also assists Syncrude representatives in screening candidates.

This approach was used successfully in two recent recruiting projects in which the majority of some 700 staff members required for mining, refining, utilities and maintenance activities at Fort McMurray were hired.

This year, Syncrude expects to hire over 1,200 people. By 1980, the workforce will total 3,000.

In addition to using Canada Manpower resources, the company also relies on newspaper advertising — and, sometimes, radio and television — in its recruiting campaigns. In the latter case, the practice is for the Public Affairs Department to arrange for advance publicity.

According to Dave, a recruiting campaign has two purposes. It enables the company to satisfy immediate demands for personnel and provides a "bank" of potential employees whose particular skills may not be needed at the moment, but whose possible value to Syncrude might be just a matter of months away.

Says Dave: "We have a major role to play in keeping Syncrude on schedule. Just as a delay in construction and/or equipment delivery would jeopardize start-up, any shortfall in recruiting would also set things back."

He notes the trend is good but adds, "We're not out of the woods because requirements are growing — and, in many cases, we must go back over territory we've already covered."

S. & C.S. . . .
CORPORATE COMPUTING CAPABILITIES AND FACILITIES PROVIDED

Bytes, video displays, computers, high speed printers, data transmission, cobol, software, nanoseconds, word processing — these are some of the tools used by Systems and Computer Services Division to provide Syncrude with corporate computing capabilities and facilities.

Ben Greenfield, manager of this highly-diversified section of the Financial and Administrative Services Department, indicates that the division works in three main areas: information systems development and maintenance, data centre services and the production of company manuals.

Systems development is composed of three sections. They are concerned with the application of computer technology to financial and administrative systems, plant business and plant technology and have been involved in recent months in a variety of projects designed to provide information systems for total plant operating needs. For example, an environmental monitoring system was installed at the site and has been in operation since April 1977. The system's five monitors take regular readings of air quality which are then assessed with the help of the terminal and computer facilities.

Another interesting application area is the "reservoir simulation model". Purchased and installed in December, the model permits Syncrude mining personnel to predict what reservoir characteristics will be in the tar sands under a variety of circumstances. Ben explains the model allows them to answer a series of "what if" questions. For example, what if the models computed results from the core hole drilling program indicated dangerous high water pressures in the mining area? Should they undertake an immediate depressurization program — or leave it alone for future consideration? The chief danger of water flooding is a loss of slope stability and a subsequent high risk for operating the dragline on this part of the mine pit. Thanks to the model, Syncrude mining personnel will be in a position to "second guess" such possibilities and avoid major problem situations.

In April, a project called the Laboratory Communications was launched to provide a computerized approach for recording and storing the results of laboratory analysis of raw and finished tar sand products. The system is designed to ensure that the best use is made of studies and evaluations as well as assisting in the day-to-day operation of the plant.

Systems development personnel have also worked closely with the Projects Department to modify the critical path scheduling model which was completed in March.

With so many events taking place simultaneously on the project — many in seeming isolation from everything else — it's vital to have an over-plan which can be regularly monitored to ensure everything is on schedule. Considered an invaluable planning tool, the Critical Path Schedule not only identifies critical activity dates, such as the date a particular unit should be finished, but also pinpoints potential delays and determines when and why "float periods" or slack times are likely to occur.

Such undertakings serve to illustrate the team concept in action, Ben observes. "We're not building systems for the computer department but for the end users. This means combining the skills of user department personnel and business analysts in the user area with our own technical expertise".

Data Centre Services recently completed a preliminary study related to installation of an in-house Syncrude computer. Results indicate the possibility of such an installation achieving a favourable cost/benefit by late 1978. No firm decision is expected, however, until additional research has been completed.

In March, a terminal, tied in to the main host computer in Edmonton, was installed at Mildred Lake. This is a transmission device rather than a computer. It has input and printing capacity and can be used for sending and receiving information, which is transferred by cassettes over transmission lines to the main host computer. It is analyzed, then returned as print-out reports to Mildred Lake.

For the past 18 months, the staff of the Manual Services Section of S. and C.S. has been working closely with user departments to produce a series of operating guides as a basis for the dozens of operating manuals required for Syncrude plant equipment. To date, about half the manuals have been published, a hefty undertaking in view of the fact that the program calls for 62 titles, more than 9,000 copies and two million pages of print.

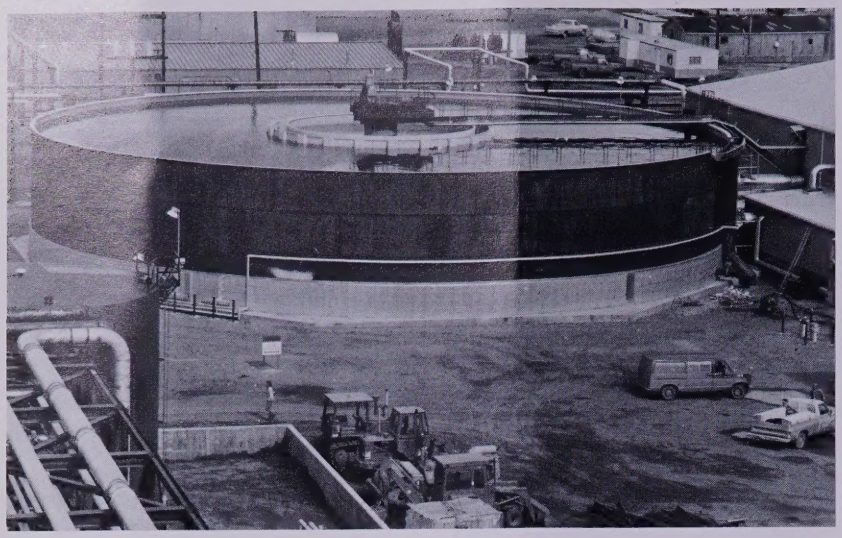
Manager Greenfield explains, "We don't pretend to be experts on the equipment itself. The user departments actually write the material and do editing. We're responsible for the presentation and production of the manuals."

Other S. & C.S. activities in recent months have included preparation of four feasibility studies for presentation to senior management. The reports, dealing with Financial Information systems, Materials Management, Equipment Records and Work Orders — are required as checkpoints to keep management abreast of systems progress and allow them to assess recommendations and cost projections for the future implementation.

In March, a financial budget system was installed and used extensively in compiling 1977-82 plans.

The systems personnel have also been very active in providing information systems for Northward Developments. Two major projects completed during the last year include an automated Mortgages Payable System and the Housing Sale Agreements System.

A continued high degree of development activity will continue during 1977 and 1978 to meet plant start-up requirements.



One of the first operating units to come "on stream" was the water treatment plant which supplies demineralized water to the high pressure steam generators and the CO boilers and clarified water for cooling tower make-up. It was commissioned on February 25.

ENGINEERING . . .
ROLE SHIFTS FROM DESIGN TO CONSTRUCTION, START-UP SUPPORT

With major design work for the project now almost complete, the Engineering Department staff are assuming new roles. Emphasis has swung sharply away from design to support of Projects in its construction activity and Operations in its preparations for start-up. Ron Gray, Director of Engineering, points out the trend began about a year ago and has increased in tempo during the past six months.

A major effort of Engineering over the past year has been shop inspection of rotating and electrical equipment at vendors' shops. Inspection prior to shipment to the site is particularly important in the case of complex equipment such as boiler and pumps and compressors, Ron notes.

Field inspections of erected equipment, which have been under way for a number of months, are expected to intensify in the coming months as more and more units near mechanical completion.

One facet of Engineering's support for Operations with a particularly heavy input from Process Engineering has been preparation of detailed operating guides incorporating the design philosophy for the various sections of the plant, as well as the start-up, shut-down and emergency procedures to be followed. To the end of July, 30 of the approximately three dozen guides required, had been issued. They form the basis for the operating manuals which are developed by the Operations Department for use in the training and guidance of operators.

The resources of the Engineering Department have also been used to assist Operations in the identification and development of start-up systems. In some cases, entire operating units are involved; in others, the system may consist of a single utility such as natural gas distribution, high voltage electrical distribution or high-pressure steam distribution. If a system such as a gas line runs through the areas still under construction, temporary block valves, cross ties and pressure relief facilities may be required. The installation and commissioning must be handled in such a way that neither construction nor operation is delayed or personnel endangered.

Very thorough examination of the start-up procedures by the Operations Department staff and the team of outside specialists which has been assembled to assist in the start-up, has identified a number of concerns and suggested improvements in the operation, Ron states. "These have been referred to Engineering for appraisal, and, where necessary, appropriate design modifications have been made."

The number of changes required has been relatively "modest", considering the complexity of the project, he says, and adds that it indicates "the thorough degree of attention" paid to detail during the original design period.

For Control Engineering, a new division created last year, a major accomplishment has been the recruitment of a highly competent team. To date, one of Control Engineering's prime responsibilities has been design and procurement of the plant data acquisition and processing (DAP) systems — a series of mini-computers to record and compile key operating data for the benefit of plant operators, engineers and management. Development of the necessary software, or computer program, is well under way with the assistance of specialists from Operations and Systems and Computer Services.

When this phase nears completion, a number of Control Division personnel will become involved in determining the feasibility of direct computer supervisory control of plant facilities. According to Ron, the DAP systems are expected to eventually be the "front end" of a sophisticated computer complex to control many of the more complicated and sensitive areas of the project.

The Planning and Economics Section of Engineering continues to conduct economic evaluations and feasibility studies for the department, as well as providing some services to the company as a whole. During the past six months, for example, it participated in such diverse economic evaluations as the appraisal of a number of plant expansion options, a major study of future coke utilization, the best timing for purchase of chemicals and catalysts, the acquisition of the company aircraft, and the move of head office to a new building.

Transfers to other departments have increased the difficulty of getting the Engineering staff to full strength, admits Ron. At the end of last year, for example, there were 53 people in the department and five vacancies. The current staff of 60 is expected to increase to 67 by year-end and to 75 by 1982.

While it may seem to be something of an anomaly to have an increasing rather than dwindling staff in Engineering, there are sound reasons for the trend. After start-up there will be the inevitable equipment deficiencies to be corrected in a process called "design fix-up". Extensive performance tests will also have to be carried out and investigations conducted into methods of increasing plant capacity by at least 20% with a minimum of expenditure (de-bottlenecking).

Plant improvement will also become a priority, requiring the use of engineering skills to improve yields and energy utilization and promote recovery of potential byproducts.

And there is always the possibility that the future economic climate and the Canadian supply/demand situation will be such that a major plant expansion may be warranted.

Temporary Research Assistant Dave Green tracks a minisonde balloon and dictates the reading every 15 seconds into a tape recorder, information which was used to check the mathematical model of plume dispersion.

ENVIRONMENTAL AFFAIRS . . .

AIR, BIRDS, MAMMALS SUBJECTS OF WINTER PROGRAMS

In the field of environmental research, the winter months are traditionally devoted to making plans for field programs to be carried out during the coming summer. The Environmental Affairs department broke with tradition this year and undertook atmospheric research, winter resident bird studies and mammal investigations in addition to assessing the various reports generated from last year's field work and designing a full schedule of data gathering for the summer of 1977.

A few months ago the Atmospheric Environment Section identified a weakness in the accepted mathematical techniques for predicting air quality. In seeking a solution, the Section has found one of the few significant improvements to be made in this area of research in ten years. The Section is developing a mathematical model of the emissions from the 183 m tall stack, with the objective of relating atmospheric conditions and emission data to air quality at ground level, in order to allow the maximum possible rate of production at the plant without violating provincial regulations. This winter, measurements of the G.C.O.S. plume were made using a combination of techniques which included airborne sampling, minisonde tracking and ground level photography. The mathematical model of plume dispersion was checked and refined using data gathered in this manner.

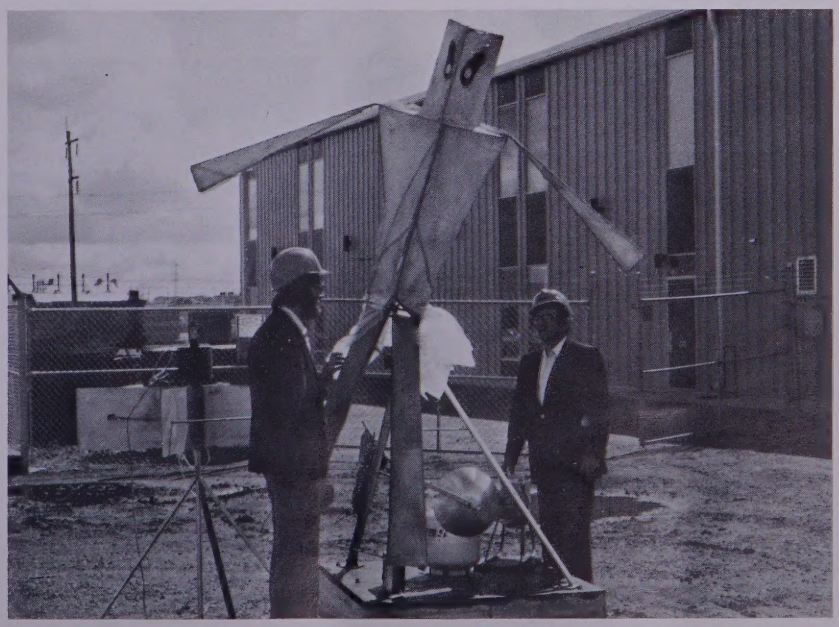
Atmospheric research was not the only outdoor activity this winter. A survey of birds residing on the lease during the winter months was carried out to add to the bank of "baseline" information about the region. In addition, Syncrude staff collaborated with a native trapper from the settlement of Fort McKay to determine the effects of development on the population of fur-bearing mammals.

Field work undertaken in the summer of 1976 produced reports on such diverse subjects as land reclamation, the natural state of the Athabasca River, the habitat preferences of 198 bird species using Lease 17, and the occurrence of mosses and lichens within 35 km of the plant. These reports were used to design research projects for 1977.

Two of the most interesting of the upcoming projects are a deterrent system to keep waterfowl away from the tailings pond, and a living network of air quality samplers. The bird deterrent system, designed in consultation with the Candian Wildlife Service, consists of a human-shaped dummy which will float on the pond, emitting flashes of light and gunshot-like explosions while moving erratically about the surface. The apparatus will be tested on a small lake this summer.

The air quality sampling system will involve fifty-six different locations where lichens are to be sampled on a regular basis. The lichens, which are found on trunks and branches of trees, will accumulate such airborne heavy metals as nickel, iron and vanadium, in addition to reacting to any increased amounts of sulfur dioxide. Measurements taken on an annual basis after Syncrude begins operations will supplement air quality data gathered by man-made devices.

Syncrude has always been open with its environmental information, and the past few months have seen the publication of six new Environmental Research Mongraphs. These monographs, which consist of consultants' reports on environmental studies, are mailed to a list of 700 universities, schools, private companies and government libraries. In all, eighteen different reports have been produced since 1973.



Wildlife Ecologist Keith Yonge and Researcher Luba Cymbalisty inspect their own creation, a scarecrow-like bird deterrent.

RESEARCH . . .

TAILINGS DISPOSAL PRIMARY CONCERN

A program to explore alternate methods of tailings disposal has been and continues to be a major activity of the Research Department, working in co-operation with Extraction Engineering. Current experiments in this field are geared to discovering methods of dealing with the continual accumulation of material in the tailings pond which would lessen sludge build-up.

Training of operators and supervisors for Mildred Lake, began last September by the Extraction and Froth Treatment Section of Research, continued during the winter at the Research Pilot Plant with the result that close to three dozen Syncrude employees are now trained in the theoretical and practical aspects of the extraction and froth treatment processes.

Research Director Dr. Rob Schutte points out that this section is also involved in an intensive study of the fundamentals of the extraction process and as a result has been able to suggest a number of ideas to improve plant operation and recovery.

A two-year program to find speedier methods of analyzing tar sand was to be completed in mid-June. Commenting on its success, Rob noted that sample analysis which once took eight hours can now be accomplished in less than an hour, making possible more immediate feedback of information and, if necessary, quicker adjustment of the extraction process. With the completion of this phase of the program, it will now be applied to other plant "streams", such as tailings, middlings and froth, he explained, adding that the ultimate goal is to have automatic analyzers for the plant.

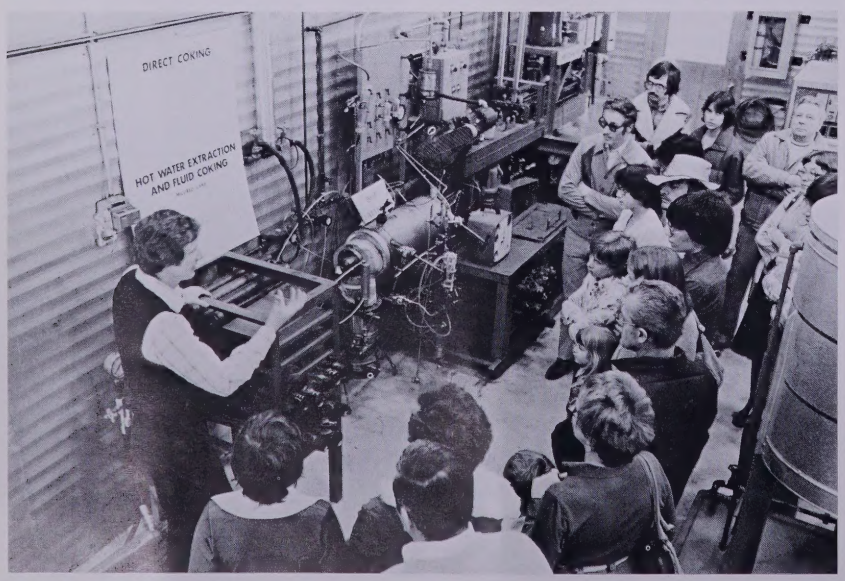
The Mining Section of Research is involved in a study of the entire region of Leases 17 and 22 at Mildred Lake. It is also studying the hydrogeology of the area in an attempt to answer a series of questions of critical importance to Syncrude. These include determining the volume of water on the site and tracing where it comes from and where it's going.

According to Rob, the Analytical and Technical Services Group and Physical Plant Divisions continue to supply services "absolutely essential" to the work of the research team as a whole. "Whether the situation calls for an electrician or a librarian, they always supply competent support. Without them, our research simply could not go on."

About half of the Research Centre's current programs are related to the actual mining and processing activities to be carried out at Mildred Lake, explains Dr. Schutte. The remainder consist of a series of studies related to de-bottlenecking and plant expansion.

One consolidation move was made in January when the Core Laboratory, formerly located on Argyll Road, was incorporated into the Research Group's recently renovated and expanded facilities on the eastern outskirts of Edmonton.

A permanent staff of 99 (27 of whom are professionals in the fields of chemistry, chemical engineering and geology) is expected to increase to 116 over the summer as additional students and temporary staff are hired.



Over 600 people toured the new facilities of the Research Department during open house in January. Jim Finstad explains fluid coking to an interested group.

CORPORATE PLAN KEY TO FUTURE DIRECTION

An operation as complex as Syncrude obviously requires a master plan — a comprehensive blueprint to document past and present activity and lay out, in general terms, directions for the future.

In the case of Syncrude, this need is filled by a recently completed document known as the Corporate Plan. As the master-mind behind it, Corporate Planner Eric Reeves explains it as a basic manual, reviewing the Syncrude story to date, defining in considerable detail its myriad aspects, and making some general yet logical predictions as to where the company is headed.

The project is unique in so many ways that there was no precedent to follow, he says, in explanation of the fact that the Corporate Plan emerged after, rather than before, the project was launched.

An extremely important facet of the long range planning program is the capability for more exacting cost management and making investment decisions. These factors become a determining factor in establishing the schedules and processes required to reach major objectives. Cost management helps dictate the priority of future goals, with early production as the prime objective, de-bottlenecking secondary and major expansion no earlier than 1986.

While it soon becomes obvious that the essence of corporate planning is trying to be certain about what is uncertain, its practitioners are not confined to airy conjecturing over future possibilities. In fact, much of the planning is geared to such down-to-earth tasks as establishing lines of authority and reporting, arranging signing authorities, investigating systems of communication and laying out the policies, guidelines and directions that go into the day-to-day operation of a large organization.

But, says Eric, in Syncrude the corporate planning function takes on some new and exciting dimensions.

"Normally, the concerns of corporate planning are: maintaining sources of supply of raw materials; marketing, which involves public requirements and changing demand; and reporting annually to the public shareholders. Syncrude has none of these concerns. It has a long-term supply of raw material, an assured market, no annual report to shareholders. Its only marketing concern is to supply a quality product as required by the participants. Its immediate concern is to assure a smooth opening of the plant."

If Syncrude doesn't precisely fit into

the corporate planning mold, it's obviously not a disappointment. "The exciting thing is that we're designing something brand new. We're trying to build a large company, almost literally, from the ground up. From what we've learned and experienced so far, we've been able to produce a source document — a foundation, if you will, on which to operate in the present, yet with the ability to be flexible and reactive to future needs".

SEEDING, STABILIZING, TREE PLANTING, MAJOR REVEGETATION PROGRAMS

Results of an ambitious program of seeding, fertilizing and tree-planting are already visible at the Syncrude site where new growth is beginning to take hold on land disturbed by the project.

According to Aurel Langevin of the Conservation Division of Operations, there are two key factors in the success of the company's program to revegetate an average of 350 acres yearly over the next 25 years. They're the weather (this spring's heavy rains proved a boon to growth) and the choice of methods and materials used in revegetation.

For a large, relatively flat tract of land, not requiring soil modification, for example, helicopter seeding is considered the most efficient and economical method. A bucket slung under the undercarriage distributes seed and fertilizer at the rate of 100 pounds of seed and 250 pounds of fertilizer per acre on the average. An important advantage of this approach is its speed. This year, for instance, aerial seeding of about 190 acres was completed in 3 days.

In all, 190 acres have been seeded and fertilized this year and another 300 acres, initially treated in 1976, were refertilized. Success of the aerial seeding method can be judged from the fact that in one 170-acre area, revegetated last year by this method, only 20 acres required retreatment this year.

Aerial seeding, 190 acres in three days.

In other areas, where soil is "difficult" and the land sloped, a system of hydro-seeding and hydro-mulching is used. A wood-fibre mulch is mixed with seed, fertilizer and soil stabilizers to form a slurry which protects the seed during germination and retains moisture. The stabilizer, in turn, holds everything in place and helps to prevent water and wind erosion.

On still other tracts of land, too irregular to be reached by hydro-seeder and not large enough to warrant use of a helicopter, the cyclone broadcasting method is used. This involves mechanical dispersion of seed from electrically powered hoppers attached to the back of an all-terrain vehicle. The hoppers are first filled with seed, which is thrown out by impellors, then with fertilizer. The final step is to drag a harrow over the area to work the seed into the soil. About 70 acres is to be seeded by this method in 1977.

Revegetation programs are carried out by a staff of four which includes, in addition to Aurel, Brent Novlesky, Earl Anderson and Gary Grant.

As well as handling reseeding, the group this year slope-terraced and stabilized the entire raw water line right-of-way. First 10 acres of extremely steep slope, difficult soil conditions and tar-sand out-cropping were stair-stepped or terraced. This was followed by planting of 12,000 caragana seedlings, provided by the provincial nursery at Oliver, and thousands of native willow cuttings. The final step was to hydro-seed and mulch the entire slope along the line's right-of-way.

The tree-planting program started in mid-May in the Poplar Creek area. Approximately 10,000 tree and shrub seedlings and some 20,000 native willow cuttings were planted over a five-acre area.

NORTHWARD DEVELOPMENTS LTD. . . . 1100 HOUSING UNITS UNDER CONSTRUCTION IN ABASAND HEIGHTS

Doreen Alleyne keeps a watchful eye on her five and two-year-old, busily exploring the broad expanse of concrete deck that stretches invitingly away from the front door, joining the Alleyne's townhouse to that of neighbors on either side and across the way.

"It's a really safe place for kids," she remarks as she wrestles with packing cases, arranges furniture in the band-box newness of her five-level townhouse, and frets mildly over the fact that, no matter how it's arranged, there's simply too much furniture for the master bedroom.

Doreen, her husband Lewis, and their two children were among the first residents of Ravine Park — one of four housing developments that make up Abasand Heights, Fort McMurray's newest — and indisputably fastest-growing — community.

As newcomers to the province, the town and townhouse living, the Alleynes, like many of their neighbors, are caught up in a whirl of new impressions, triggered by all the surprises, excitment and frustrations that go into a family move.

When Lewis accepted a job as a welder with Syncrude, both he and his wife moved west (from Fermont, Quebec), admittedly determined to like what they found. "So far we're delighted with the community," enthuses Doreen. "The people are friendly, always ready to help out or give you a lift downtown. It's a beautiful part of the country and somehow you feel right away you're a part of it."

But it hasn't been all roses. There was the initial shock of facing food and housing prices much higher than they were accustomed to, for example. It's a feeling that's gradually wearing off as the couple adjusts to "a totally different economy," Doreen admits. The family is learning to ignore the sights and sounds of construction on all sides, looking forward to completion of the area's leisure centre with its pool, saunas and craft room, and watching as landscaping details such as lighted pedestrian walkways are added and the community is gradually fashioned into a finished residential area that promises to be as attractive and "workable" as any in Alberta.

For the Alleynes, life in Fort McMurray has begun in the area which Syncrude's Vice-president of Housing and Urban Development, John Elson, refers to as "our major milepost of recent months".

Carved out of forest on a hilltop above the Hangingstone and Horse Rivers (and still ringed by wooded ravines) Abasand Heights somehow manages to present more of a rural than big city aspect despite the hundreds of houses that dot its roughly 140 acres.

Had they seen the site of their present home last February, it's unlikely the Alleynes would have been impressed. According to John, "Six months ago, Abasand Heights was a scene of mostly mud and sewer pipe."

The roughly 1100 housing units now in various stages of construction in four separate Abasand Heights developments — less than a year after servicing began in the area — illustrate the pace of residential construction being maintained by Northward Develop-

ments Ltd. In all, close to 2,000 housing units are under construction for Northward in various parts of Fort McMurray. About 900 units had been completed at the beginning of June, including 316 single-family homes.

John Jordan, Northward's General Superintendent of Construction, gives an indication of construction records the company has achieved when he notes that in Abasand's Hillview Park — a development containing multi-level and conventional two-storey townhouses — 140 units were turned over earlier this year, some three months ahead of schedule. By the end of June, landscaping was being installed around the 214 units, all of which had been rented.

For Syncrude newcomers, moving into the confusion of an instant community, still in making, obviously has its drawbacks. But most appear to be taking the whole process in stride, generally crediting Northward with supplying imaginative and attractive housing in an incredibly short time.

A third Abasand neighborhood, containing 350 patio homes, intermingles single detached units with clusters of up to four interlocking units. Although these homes will be individually owned, Murray Cook notes that all the usual tasks facing the new homeowner are eliminated here. Completely fenced and landscaped, with fully sodded yards, the units have garages, paved driveways, concrete block walks and large private patios. Says Murray: "Northward has been very concerned about utilizing the hours of sunlight in Fort McMurray. For this reason, wherever possible, the patio or seating area is positioned to take advantage of the afternoon sun."

Commenting on Northward's philosophy of providing livable, yet affordable, housing, he notes that mushrooming servicing costs have prompted the company to "put the money on top rather than into the ground — into amenities such as landscaping, patios and garages that contribute to improved lifestyle."

Despite the obvious difficulty of getting settled in the midst of churned-up roads, blowing dust and construction activity on every side, at least one new resident of an Abasand patio home — Jill McNally — declared herself totally satisfied with her new surroundings. Impressed by the effective use of space in their two-bedroom single-detached home and with the privacy afforded by the unusual arrangement of yards and patios, Jill and husband Glen (a Syncrude equipment operator) expect to improve their property by building an extra bedroom and family room in the insulated basement.

Hangingstone Place, containing 301 rental units, is the fourth development under construction in Abasand Heights. Occupying a hilly site that will ensure many of its residents a spectacular view of the valley, the area will offer a choice of townhouse or apartment-style living. In one section, units are ingeniously arranged so that two-level townhouses are topped by a single level of three-bedroom apartments, each featuring its own fireplace.

A lack of uniformity in layout between adjacent units was dictated by a desire to keep "quiet area over quiet area," Murray Cook explains, adding that units are flipped over in the various configurations to ensure that bedroom areas adjoin. The whole problem of noise transmission is one that Northward officials take seriously. Special construction features have been incorporated into walls, floors and stairwells to enhance soundproofing.

A second section of Hangingstone Place will contain more conventional two and three-bedroom units in a four-storey apartment complex featuring heated underground parking with a wash bay. A large leisure centre, serving both sections of the development, will be shared with residents of Hillview Park.

Some units in Hangingstone Place are to be ready for occupancy this summer while construction of the remainder will continue through the winter.

The first of three 13-storey apartment towers in River Park Glen was topped off in June.

The 214 townhouse units in Hillview Park are separated by large landscaped areas containing playspace for children.

Elsewhere in the town, the first of three 13-storey apartment towers of River Glen Park was topped in early June. The apartment complex, being built by Northward in the downtown area near the Athabasca River, will eventually contain 500 residential units along with commercial and recreation facilities. About 250 of these rental units are scheduled for completion this year.

Although the major thrust during the past several months has been directed toward completing houses in Abasand Heights, work continues in Thickwood Heights (former Area Five), where a 222-unit townhouse complex — Signal Hill Place — is nearing completion.

John Jordan predicts that about 1,200 units out of a total of 1,316 started this year (excluding River Glen Park) should be complete by the end of 1977.

According to John Elson, by 1979, Syncrude will have provided between 2,500 and 2,700 homes for sale or lease to Syncrude employees. In all, they're expected to house about 10,000 people.

Noting that the housing program at a total cost of about $180 million is "a huge undertaking in its own right," John adds he expects the tight housing situation of recent months to ease by autumn with the addition of 200 to 300 units per month over the next three to four months.

DRAGLINE OPERATION DEMANDS INTENSIVE TRAINING

The most spectacular view of the Fort McMurray area is accessible to only a handful of Syncrude employees.

The privilege of surveying the landscape from the point of the 360-foot boom on the new Marion 8750 is reserved for crews of the huge dragline who, once a day, make the hair-raising trek up one side and down the other side of the boom to see that all is functioning as it should be in the machine's lube room at the boom point.

It's much more than a sightseeing tour. Knowing how to spot potential trouble is a crucial part of training for those who man the multimillion dollar machines. As well as on-the-job instruction provided by trainers from the Marion Power Shovel Co. and Bucyrus-Erie — manufacturers of the Syncrude draglines — operator trainees are thoroughly checked out on the theoretical aspects of dragline operation through a newly-developed Syncrude training course.

In the case of dragline training, crews can expect to become very much involved with their own learning process. Trainees will work through a series of steps including pre-testing, workbook exercises supplemented by instruction in slide-tape form, and finally post-testing. If an operator already has the required knowledge in a certain area, testing will pick this up and he can quickly move on to the next step in training. For those not so sure of their ground, tracing a path through the instruction process allows trainers to assess when the student operator "knows what he should." Says Dave: "If a trainee scores 90% on his pre-test, he doesn't have to take that part of the course. We believe he should know 100% of course — but we do allow 10% for minor errors."

Working individually in acoustically-sound carels, the potential operator can "come in, grab a video tape or slide-tape presentation with accompanying workbook — and work at his own pace."

The package has been developed around the CAP system (competency, analysis and profile) — a concept involving the assessment of a candidate's theoretical knowledge, attitude and practical skills in various areas.

Training for dragline crews is divided into three packages or modules geared to the groundperson, oiler and operator respectively. The module for a groundperson, for example, would include sections on mine orientation, dragline orientation, safety equipment orientation and pre-start checks and follow up. The oiler's program is concerned with cab operating orientation, corrective, preventive and routine maintenance and pre-operating procedures. For the operator, emphasis is on pre-operating and emergency procedures, cycle functions and mining techniques and strategy.

An external educational consultant has assisted Syncrude's mine training department in writing the script to accompany the slide presentation, Dave notes.

Those who make low scores on initial pre-tests shouldn't feel downcast, claims Dave. Tests on the 17-yard Li'l Beaver, for example, yielded average pre-test results of 37% and average post-test results of 97%. Even weeks later, tests showed the level of retention remained at 97%.

Many of those training for the 80-yard dragline will have had experience on the 17-yard and all will have had experience in operating a variety of heavy equipment before getting a crack at the "big ones".

With each of the four draglines expected to work virtually non-stop once mining activity is in full swing, there will be a heavy demand for trained operators. Trainers say the "ideal" would be for all equipment operators to eventually qualify for a slot on the dragline crew.

Li'l Beaver (right), the dragline which was originally used to test this type of mining, is dwarfed by its much bigger counterpart, the first of the operating machines.

Dragline mining as the operator sees it.

The training package is set up as a self-instruction program, explains Dragline Training Development Supervisor Dave Donald. To illustrate the concept, he flicks the switch on a compact film-tape unit in his Lower Camp office and the visitor finds himself caught up in a step-by-step explanation of what makes the giant machines tick.

Since operators are on a five-week shift system, "theoretically every operator would come in for training every 10 weeks," says Dave. "But they can be brought in at any time for special training."

CONSTRUCTION . . .

PROJECT NEARLY 80% COMPLETE AT END OF FIRST HALF OF 1977

"On schedule" is a crucial phrase in the construction industry — and one that John Lynn utters with understandable satisfaction as he outlines progress at the Syncrude site.

As Construction Manager, Projects, John has been closely involved with the myriad building activities that have gone into changing the project's status from 55% complete last fall to 79% complete at the end of June this year. Although reaching the three-quarter mark in construction might be considered a significant milestone, those closest to the project scarcely took time to celebrate as they geared up for the final push that will see the bulk of construction completed by mid-1978 start-up.

To the infrequent visitor, the dramatically altered plant site is a revelation as roughly 7,000 construction workers complete plant facilities, install equipment, and assemble mammoth machines. In the mine area, the first of four massive walking draglines has been in operation since late May, readying material to feed the equally huge bucketwheel reclaimers, taking shape nearby.

In the six month period between November and May, more than three dozen separate "packages" or units of construction (of a total of approximately 190) were completed and turned over to Operations by Projects.

They include the Raw Water Supply Line, a gravity line running from Mildred Lake to the site (turned over in November); the Electrical Distribution System (January); the Water Treatment Plant (February); the Nitrogen Plant (April); the Upgrading and Utilities Operations Centre offices (January); the Firehall and Fire Water System (April); and two turbine/generators in the Utilities Plant (May).

Bill Small, Assistant Construction Manager, notes that the Utilities Plant (built for the Alberta Energy Company to be operated by Syncrude) was 78% complete to the end of May. Even more significant than the fact that this particular project was on schedule was the realization that it would be completed well under budget, he says. "The 1974 cost projection was approximately $230 million but our latest forecast indicates a lower cost." He adds that all major equipment for the plant is now on site with the remaining materials to be delivered by August.

The Utilities Plant is a vital component of the total project, Bill explains, since tremendous amounts of electricity are required, not just to meet the normal needs of an industrial complex but to power the draglines.

In addition to its two gas generators, the Utilities Plant has four steam turbine/generators driven by three boilers, with capacity to produce 750,000 pounds of steam per hour at 900 pounds pressure. The exhaust from the turbine/generators is collected and used in the process of extracting oil from tar sand.

The work force on the construction site totalled more than 7,000 in the spring of 1977.

The Poplar Creek spillway controls the flow of water diverted from Beaver Creek.

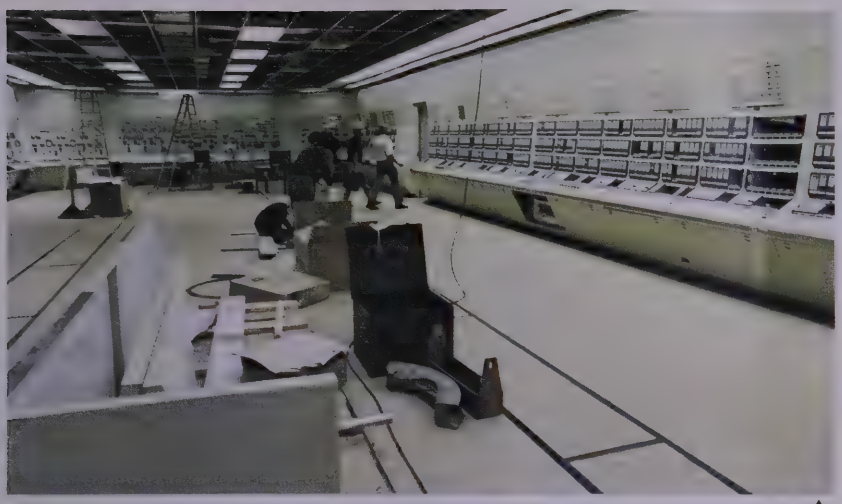
A 240-kilovolt line ties the plant into the Alberta electrical grid system so that excess power produced by the plant can be fed into the system — or extra power drawn from it as required.

According to Bill, the condensate (pure water) system is also nearing completion with piping and electricity 80% complete at the beginning of June, steam turbines 60% and boilers 99% complete. The Air Compressor Annex to the plant was turned over in April.

Partial turn-overs during recent months have included portions of the Mine Services Building, the Upgrading Operations Centre (consisting mostly of office space at this point) and Mechanical Shops and Warehouse, where installation of equipment is now taking place.

A 16-inch natural gas line to the site from Atmore, some 120 miles north of Edmonton, was completed and turned over in May. The Alberta Oil Sands Pipeline, a 22-inch line which will eventually transport the crude oil, is scheduled for completion in August. Its first function will be to bring in the 700,000 barrels of gas oil and naptha required for commissioning of the plant.

As the project moves closer to completion, attention is increasingly focused on turn-overs — from Projects to Operations, from construction to use, explains John Lynn. During the past six months, a major effort has been made to establish ways of



Two views of the room from which the utilities plant and upgrading facilities are controlled.

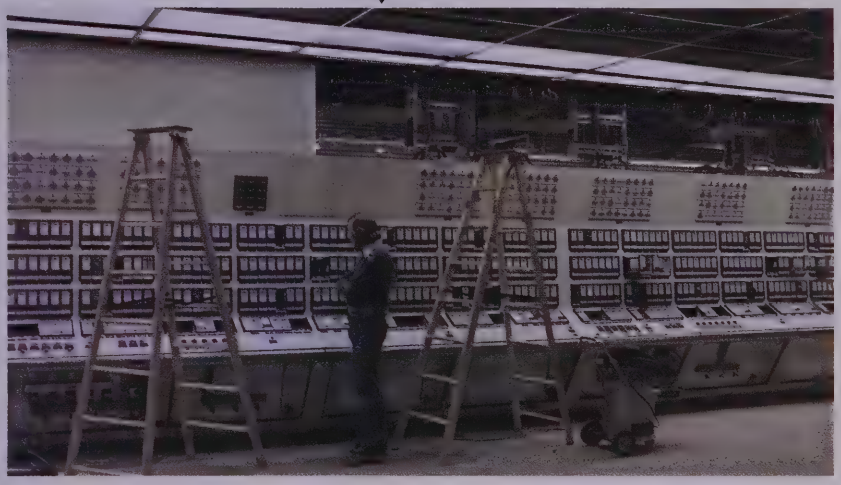
making these transitions as smooth as possible. This involves developing planning systems and control systems and encouraging safe work practices. Development of strong working teams between Projects people in all construction areas and Operations personnel is now a priority to ensure that construction continues safely in areas where the surroundings have started to "come alive" with the introduction of air, water, steam and electricity.

Dave Allen, Turn-Over Manager for Projects, is co-ordinating this process, working with Operations start-up Managers Laird Wilson and Fred Scheybeler. He points out the importance of making sure every unit is ready when it's needed by Operations, allowing time to check out equipment and train operators before start-up. This has already been accomplished in the case of the high and low lift pumping stations which were turned over last year and operated during the winter months.

Critical areas as far as construction staffing was concerned were in the pipefitter and pipefitter-welder trades, particularly in January and February. John Lynn notes, however, that by March the 2,000 tradesmen required in these areas were on site. "At one point we thought we might have to import labor, but as it turned out, we were able to obtain all our requirements in Canada."

Of the roughly 8,000 people at Mildred Lake this summer, about 900 are non-manual and the balance construction tradesmen.

As construction moves into its final quarter, John ventures only one prediction: "We expect to stay on schedule."



Miles of piping and wiring connect the many reactor vessels of the upgrading area.

1

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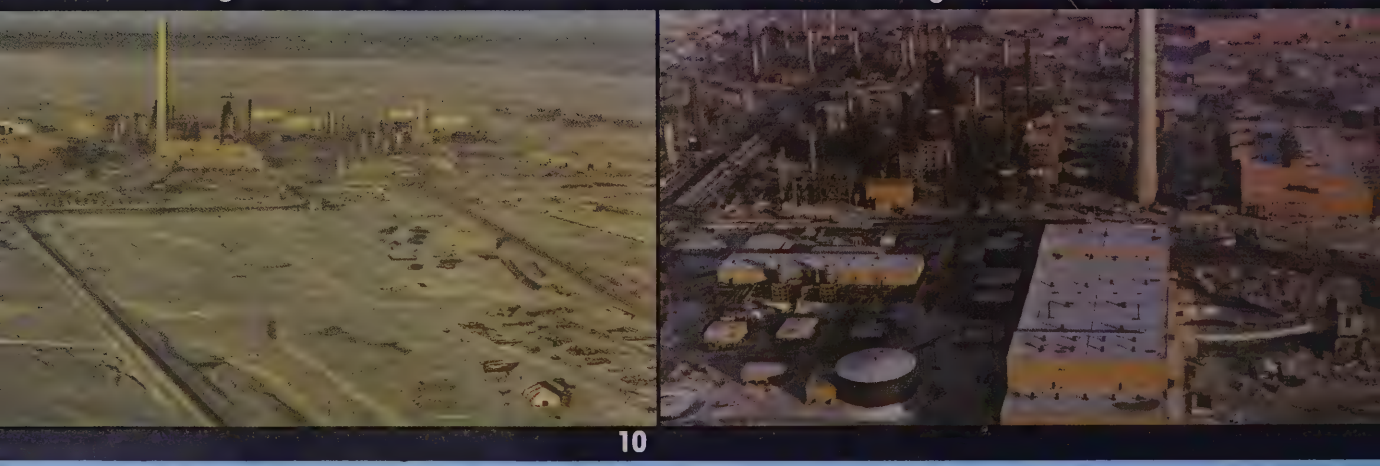

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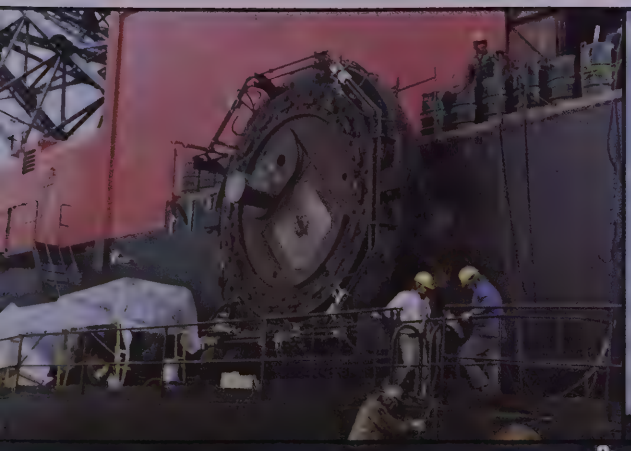
1,2,3,4
The first six months of 1977 saw the assembly of dragline number one completed and the mammoth machine walk off the construction pad into the mine site where it made the initial cut.

5,6,7,8,9
From far out in the mine site, the conveyor system stretches to the radial stackers which will deposit the tar sand in the dump pocket. Bucketwheel reclaimers (far right) will move the sand to the conveyor belt from the windrows built by the draglines.



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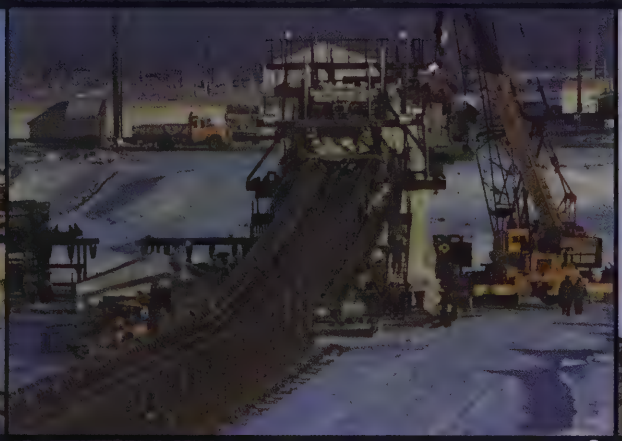

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Photographs by Ken Orr and Ken Jubenvill

10,11,12,13
As the year progressed, construction progress was measured less in visible changes than in the number of completed units which were turned over to the operations staff.

Syncrude
we want you in on what we're doing

By the spring of 1978, 18 million tons of tar sand will be stockpiled.

DRAGLINE . . .
OPERATING EXPERIENCE DESCRIBED AS "AWE INSPIRING"

The event may not have drawn the worldwide publicity of a moon landing or a walk in space. But for the hundreds of Syncrude and Canadian Bechtel people involved in the "birth" of the mammoth Marion 8750 Walking Dragline, its first gigantic steps to the edge of the minesite were as dramatic and significant as any space adventure.

Each six-foot stride taken by the 6,500 ton machine as it confidently manoeuvered its way toward its destination on 80-foot steel "shoes", was seen by its creators (including Marion factory specialists) as a reward for 16 months of painstaking on-site assembly. Thousands of parts had been successfully pieced together, resulting in this smoothly-operating mountain of a machine that now dominated the landscape and dwarfed equipment of "normal" dimensions such as "Li'l Beaver", the 17-yard Bucyrus-Erie in service for years at the site.

But the significance went far beyond the fact that the May 23 test run was a success. Here at last was an event that brought years of planning and building into focus. Within days, its 80-cubic-yard bucket would be gouging away overburden in 100-ton bites, moving steadily closer to the oil bearing sands, a 360-foot boom swinging smoothly around in a measured arc to drop its load (enough to fill eight 10-yard trucks) — then turning a minute or so later to repeat the process.

Within months the exercise would become commonplace, with the Marion joined by a Bucyrus-Erie of similar capacity — and a year or so later, by a third and fourth machine.

But at the end of May, with construction of the $2.15-billion complex three-quarters complete, the initial walk by "Big Red" — as the enormous machine was quickly dubbed — offered indisputable evidence that hundreds of seemingly unrelated segments of the master plan were finally coming together. The whole process was beginning to work.

If the sheer size and power of the machine (no less than 24 motors inside the 90 by 100-foot house atop the 600-ton, 80-foot wide "tub" or base of the dragline) was a revelation to those observing its progress from a distance, it was even more overwhelming to those taking over the controls for the first time.

"A thrill," commented one operator. Said another: "It was kind of nerve-wracking for the first hour or so."

The best phrase Gary Hennings could come up with to describe his experience as a first-time operator of the dragline, was "awe-inspiring". You sense, somehow, the words are hardly characteristic of the man who's had almost a decade of experience at the controls of more conventional heavy equipment.

No matter how experienced the operator, explains Gary, he's not likely to be prepared for the sensation of operating a machine with a reach of the length of a football field and the capability of digging 200 feet below the surface. (Syncrude's mining operations will initially be limited to about 140 feet.)

On a typical minesite for example, the largest machine likely to confront an operator would have a boom length of around 300 feet and an operating radius of 340 feet. An even more striking comparison might be made with a gravel pit operation where a respectable spread might include a dragline with a two-yard bucket, one fortieth the size of the Marion's.

As one mining operation spokesman suggested — "Just think of it as roughly the same size as a two-storey garage."

Pride in being chosen among the first group of operator-trainees for the dragline was evident in all of those connected with the Marion's first days in the mine. The operator, oiler and groundman assigned to work the machine all consider themselves to be part of an "elite" crew, admits Rick Everett, technical supervisor.

"The fellows involved are proud of that machine. They may be a bit nervous at first — mainly because of the speed of the controls which are about 30% faster than on normal equipment."

To help the beginning operator make the transition from the 17-yard diesel-driven Li'l Beaver to the 80-yard machine, controls in the left hand cab were set to operate at 60% speed.

Finely-tuned controls in the electrically-driven machine (its lifeline is a 25-kilovolt "extension cord" which must be avoided by other equipment working in the area) give the machine more flexibility and allows greater precision in lifting and dumping loads, says Gary Hennings. At the end of June he admitted he was still "coming to grips with both the thrill and responsibility of controlling such a powerful force. With that bucket weighing 90 tons, you're really aware of what is going on below you."

Despite the relative luxury of the cabs — panelled walls, comfortable seats and air conditioning — the operator nonetheless welcomes an exchange of duties every few hours with the oiler or groundperson. "It does you good to get out in the fresh air for a while — or back in the house to tinker with the mechanical parts of the system."

With its shakedown mission well behind it, the Marion 8750 is now in full time use, removing overburden and stockpiling tar sand, getting ready to feed the four giant bucketwheel reclaimers in what promises to be Canada's largest mining operation.

The first Syncrude dragline started mining on June 24, 1977.

MILESTONES

Some of the milestones of the past six months, as reported in *tip*, the Syncrude publication, were:

Jan. 15, 1977

SUPERVISORS TO BE COACHED IN SYNCRUDE TEAMWORK PLAN

Executive management has unveiled a major management training program that will impact on all management and supervisory personnel in Syncrude.

It's called "Managing in Sync" (MIS for short), and it's a training program designed to help move the company toward the kind of management approach indicated by our new Employee Relations Philosophy. It's a step in improving the quality of work life for all Syncrude members by recognizing and utilizing all the talents of all our people, according to the E.R. Organizational Effectiveness team, headed by Jonno Hanafin, which is implementing the program.

This massive effort will take the form of one-week training courses for supervisors from February to June. The objective of the program is to blend the pursuit of company objectives with the work life needs of individual members of Syncrude through effective management using team approaches.

Said President Brent Scott: "The team approach isn't necessarily what we're practicing now — it's where we want to go. To get there, we have to start by being sure that all supervisors know what the team approach is, and how to put it into effect with their own people. That's why the MIS program will start with supervisors. After supervisors understand and support the program, we'll begin working with non-supervisory people to complete the circle. In time, everyone will be fully involved. They have to be, or it won't work."

Syncrude is committed to managing with the team concept for the following reasons:

It's the most efficient way to meet our corporate objectives;

The productiveness of all our employees will be greater with this approach than others;

It gives everyone in Syncrude the opportunity to contribute to our success as a company;

We can be a more productive and rewarding organization if we can operate in a non-confrontation environment, and, the primary determinant of whether we succeed or not will be the way we manage our people;

The team approach can minimize turnover and absenteeism (which reduce our productivity) and make Syncrude a place where people want to work and contribute to the best of their abilities;

The continuous development of our members' talents and potential will allow them the opportunity to grow and help expand our pool of talents.

Each week-long management training workshop will begin with a review of the present state of our working life at Syncrude. Surveys to identify where we are in our working relationships have been distributed to all supervisory personnel. Feedback from this will be used in the course.

Next, the workshops will centre on how we should apply the team concept to the Syncrude organization to reach the goals described in our E.R. Philosophy.

Throughout each five-day training session, 32 participating members representing a cross-section of levels from the president through first-line supervisors, will learn management team skills as a foundation for developing effective on-the-job team management approaches.

Developing team skills is critical to the success of using team approaches to management. These skills include effective two-way communications, group problem-solving and participative decision-making.

Training coaches will work through the week to assist attendees to produce practical blueprints for putting these approaches into action.

Immediately following the MIS program, training efforts will be concentrated on developing team skills in non-supervisory members. "The meshing of both programs is the vital link in creating effective work teams throughout the company," said President Scott.

The main determinant of the success of Managing In Sync will be the degree of commitment each individual gives to the program. Each of us will have to examine his or her work attitudes, habits and relationships with respect to other members of Syncrude.

The end objective is to get the achievement of the company's objectives and the working life needs of each person "in sync".

Jan. 15, 1977

EMPLOYEE RELATIONS PHILOSOPHY

The underlying assumption in establishing an Employee Relations philosophy is that the work life needs of individual employees are complementary with basic objectives of the Company.

For its part, Syncrude recognizes its human resource as being comprised of all its employees, each to be recognized as an individual with both individual perception and needs. Syncrude believes that each employee has needs for security, acceptance, and respect, and for the opportunity for personal achievement and growth. Further, Syncrude accepts the obligation to maintain a work environment which permits these needs to be met within the pursuit of Company objectives. Syncrude believes that the work environment is influenced by the behaviour of all employees in the organization. To the extent that each employee assumes that others share a desire to do good work, to look for opportunities to accept responsibility, and to have the capability to plan, manage, and attain results, then Syncrude will become a more effective organization characterized by openness and trust.

More specifically, Syncrude expects its supervisors, managers, and indeed all employees to be guided by the following principles:

1. To the greatest degree possible, team approaches are to be employed in meeting Departmental and Company objectives.

2. Each employee should understand the nature of his or her job and how it interrelates with others. Beyond this, each should know the standards by which job performance is judged and how he or she is performing against these standards.

3. In general terms, supervisors and managers should establish a work environment which recognizes and encourages employees' needs for personal growth and achievement to the limit of their abilities. Consistent with this, working relationships should be established to recognize that employees need to be informed and to have ready access to information related to their job, to have opportunities for self-direction, and to participate in decisions affecting their jobs and work environments.

4. Each employee's work is deserving of respect and fair compensation.

5. Employees have a right to a fair hearing and a timely response to both their suggestions and concerns.

McMURRAY BOASTS MOST OF SYNCRUDE'S 1,245 MEMBERS . . .SO TIP MOVES NORTH

Syncrude's membership more than doubled during 1976, according to figures released by Employee Relations, soaring from 601 to 1,245 — an increase of 644 persons. The 1976 figure includes 34 temporary members.

But 1976 is only an indication of things to come during the present year. The population is expected to jump by more than 800 during 1977, pushing membership to well over the 2,000 mark.

During 1975, the company population increased by 250.

Most of the new 1976 members were assigned to Fort McMurray. During last year, the number of Syncrude people living there grew from 135 to 665.

The Operations Department staff expanded by more than 500 per cent from 106 to 564, accounting for 70 per cent of the total company increase.

Other notable departmental growths were experienced by Northward Developments, which almost tripled in size; Projects, which increased by nearly 30 per cent; and Employee Relations, which grew by 25 per cent.

New departments created during the year were Environmental Affairs, formerly part of Research, and Internal Audit and Project Control.

Departmental sizes at the end of 1976 are as follows:

Management	16
Employee Relations	68
Engineering	51
Environmental Affairs	21
Financial Services	109
Internal Audit & Project Control	36
Legal Services	4
Operations	564
Projects	186
Public Affairs	14
Research	102
Northward Developments	74

More Syncrude people now live in Fort McMurray than in the Edmonton area.

The population shift occurred during November and at the end of the year 665 members called the northern town their home, contrasted with 580 in the city.

Because more members are in Fort McMurray, the Public Affairs and Employee Relations Departments have switched the headquarters of *tip* to the downtown Fort McMurray office. This change will permit better news coverage of company events.

The next issue of the company newspaper will be published and printed in Fort McMurray. Editor Larry Jenson is living in town and welcomes news tips from everyone.

Feb. 15, 1977

COMPANY CONTRIBUTIONS TOP $500,000 IN TOWN

Almost $91,000 was donated by Syncrude to Fort McMurray town projects and community groups during 1976.

The figure would've been higher if some of the town's projects had been started in 1976 as was anticipated, according to John Barr, Public Affairs Manager. In 1975, more than $450,000 was donated.

Contributions come from three company funds: Capital Projects, Volunteer Leadership Training and General.

Projects that Syncrude assists are community initiated, owned and operated. Wherever possible, the recipient bears part of the cost.

During 1976, from the Capital Projects Fund, $25,000 was given the Joint School Board for instruments and music to start up a music program in the secondary schools; $17,000 to the Parks and Recreation Department to construct two outdoor ice rinks by Thickwood Heights School; $15,000 to the town toward the study of the proposed MacDonald Island Recreation Complex; $15,000 and lab equipment to the Museum and Heritage Site Association to further develop their museum and site and to the Golden Age Society for a drop-in and crafts centre; and $5,000 and kitchen equipment to the Fort McMurray Camping Association to install water and sewer and upgrade facilities at their Gregoire Lake campsite.

Almost all of the $10,000 allotted by the Volunteer Leadership Fund was used this year by 22 community groups and organizations. Volunteer leaders applied for and received $8,958 for training in recreation or the arts.

The $8,958 awarded in 1976 was short of the $10,000 available because not enough qualifying groups or individuals applied, according to Merle Rudiak, Assistant Community Relations Co-ordinator. The 1976 funding, however, was a substantial increase over the previous year, the first year of the program, when only $6,000 was distributed. This shows that

The secondary schools music program.

community leaders are becoming increasingly aware of the fund's existence. Next year, Merle expects assistance requests to surpass the funds available.

The highest single grant during 1976 was $625 to the Fort McMurray Kinsmen Pipe Band for instruction.

The Girl Guides received the most money during the year. Their three grants totalled $1,137 and went toward staging a number of leadership development workshops.

The McMurray Weavers were awarded $919 for weaving workshops during the year. The Minor and Senior Hockey Associations got $882 for two referees' clinics and a national coaches' seminar.

Other groups receiving more than $500 were the Fort Chipewyan Brownies and Girl Guides who got $583 for leader training courses; the Fort McMurray Swim Club, $552 for an aquatic supervisors' clinic; and two representatives of the Arts and Crafts Guild, $536 to attend a pottery workshop in Banff.

Other grant recipients were the Royal Life Saving Society ($475), the Boy Scouts ($392), the Softball Umpire Association ($367), the Miskanaw Golf and Country Club ($300), the Fastball Association ($300), the Tara Dancers ($300), the Anzac Community League ($260), Early Childhood Services ($250), Ptarmigan Ski Club ($184), the Soccer Association ($160), Pace Setter Track and Field Club ($150), Oilsands Ladies Curling Club ($150), and the Society of the Friends of Music ($100).

The Heritage Park site.

Thickwood Heights ice rinks.

The Kinsmen Pipe Band.

The third part of the Syncrude donations program is the General Fund. From this fund, $4,987 was distributed to 18 community groups. The largest donations, $1,000 each, went to the Blueberry Festival Association for its tot tent and parade and to the Miskanaw Golf Club for the Canadian Professional Golf Association Tar Sands Tournament of Champions.

A substantial donation, a trail warm-up shack for which no dollar value was noted, went to the Ptarmigan Nordic Ski Club.

Five hundred dollars went to each of three organizations: the Winter Carnival Committee for carnival buttons; to the Overture Concert Association for its 1976 program and to the Society of the Friends of Music to help them bring the Edmonton Symphony Orchestra to town.

Other major donations went to the Red Cross ($300), the Fort Chipewyan Chamber of Commerce ($200), the Voice of Alberta Native Women's Society ($200), the Senior Hockey Association ($150), and the Soccer Association ($150).

Contributions also went for advertisements in the two secondary schools' yearbooks, to the Kinsmen Club for a radio advertisement on safety, to the Corrine Knight Memorial Fund and to the Royal Canadian Legion for a Remembrance Day wreath.

March 15, 1977

FIRST PLANT COMPLETED

Projects Construction handed over to Operations on February 25 the first major piece of the Syncrude Project — the water treatment plant.

In a small conference room in the new Upgrading control centre (Plant 10) nine men gathered to mark the end of the construction phase of the water system and the commencement of a four-month commissioning period preparatory to start-up.

Presenting the documents and plans for the plant was Keith Burrows of Projects who oversaw the construction phase.

Acknowledging that the system was mechanically complete and otherwise acceptable to Operations was the PMT (process-mechanical-technical) team of Bob Mills, Bob Batchelor and Jim Hilsenteger.

It'll take the next four months to get the water treatment plant fully operational, said Utilities Superintendent Edmond Pogge, who described as 'fantastic' the pre-commissioning work of the PMT team. The three team members are now heading the flushing and cleaning of tanks and piping, the calibration of instruments, the setting up of timers, the loading of chemical resins into tanks and myriad performance tests.

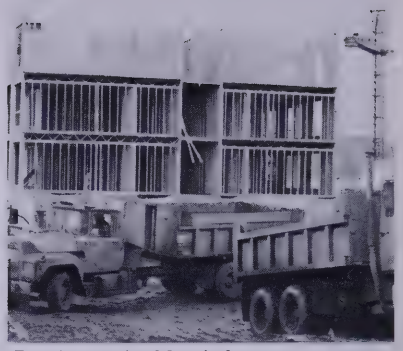
The water treatment plant has two functions. One is to supply demineralized water to the high pressure steam generators in the power plant and the CO boilers in Upgrading and the second is to provide clarified or lime-softened water for cooling tower makeup.

Other persons at the signing ceremony were Assistant Construction Manager Bill Small and Chester Houg, Harold Senger and Ian Leach of Operations Utilities.

PMT team give the go-ahead to Operations to begin commissioning the water treatment plant for start-up.

Canadian Bechtel construction workers perform one of their last duties on the plant, removal of snow from the large clarifier tank.

Patio homes are new to Fort McMurray.



Framing on the 96-unit, four storey apartment building in River Glen Park (Riverlot 5) is almost complete.

March 15, 1977

NEW HOUSING AREA ABOUT TO OPEN UP

Area One is about to become populated with Syncrude people.

By March 4, the keys to 16 townhouses had been turned over to Northward Developments' operations department by contractors and it's expected that the first tenants will begin moving in by the end of the month. Many of the first tenants will be Syncrude members who've been living in camp at Mildred Lake, waiting for construction to be completed.

All 1094 Northward units in Area One (now designated as Abasands Heights) are scheduled to be filled within a year. The total includes 443 townhouses, 301 apartments and 350 patio homes. Only the latter will be sold.

Construction in Abasands Heights began last August with the installation of services, but it wasn't until November that any framing could be seen. Now, the hill above the townsite, west across Highway 63, is bustling with activity and wood framing and construction workers can be seen in all directions.

The first completed block of townhouses is part of a 214-unit complex to be known as Hillview Place. Another townhouse area will be called Ravine Park. An apartment complex, Hangingstone Place, will begin taking tenants in August.

Occupancy at Northward's unique patio homes will begin in May. This area is yet unnamed. The patio, or linked, housing is a new concept in Fort McMurray and fairly new in Alberta as well. The distinctive homes are clustered in groups of two or three on short cul-de-sacs. Some are linked only by garages. The advantage is the saving in land space, without the sacrifice of living area or attractiveness.

Elsewhere in Northward housing construction, work is proceeding in Thickwood Heights and Riverlot 5 near MacDonald Island. Northward Construction Manager Norm Newall said all construction is on schedule and by the end of the year almost all of the units now under construction will have people in them.

Occupants will be moving later this month into Signal Hill Place, a new townhouse complex at the west end of Thickwood Heights, and the recreation centre there should have its swimming pool, sauna and other facilities ready in May. A recreation centre at Cedarwood Place (the townhouses completed in January on Silin Forest Road) is in earlier stages of construction and workmen there are shooting for a July completion.

The 316 single family homes in what has been named Hillcrest Subdivision in Thickwood Heights have all been completed, with the exception of some exterior work, and all have been sold. Landscaping for these homes will begin in May, or as soon as weather permits, according to Norm Newall.

In Riverlot 5, the framing is proceeding on the four-storey, 96-unit apartment building slated for first occupancy by July. The first of three 13-storey highrise apartment towers has risen to the third-storey level en route to a December completion. A 111-unit townhouse complex to be built there is at the foundation stage of construction.

Syncrude management people visit townhouses in Hillview Place.

April 15, 1977

OIL MINING: A NEW EXPERIENCE FOR MANY

They're coming from coal mines, from copper mines, from nickel mines. Ultimately, there'll be 1,000 Syncrude mining people at Mildred Lake, operating a new kind of mine — one that contains oil.

Only those who have worked at Great Canadian Oil Sands (GCOS) down the highway will be experienced in mining commercially for oil. And only those who've participated in Syncrude's pilot mine will have the experience of having seen tar sand dug out with a dragline.

July start-up

A quarter of the mining team is now on staff and they're keenly anticipating the July start-up of the first of four giant dragline mining machines when it bites into the three-by-five-mile mining area, signalling the commencement of formal mining activities. Plant production of synthetic crude starts a year later.

The performance of the draglines and the other mining machines — the bucketwheel reclaimers, lump separators, conveyors and stackers will be closely watched because, as Dave Adam points out, "They represent the culmination of mine design and planning activities over many years."

The Assistant General Manager of Projects Mining underscores the challenge: "We're dealing with tar sand, a material unique in mining operations. In fact, the whole operation is unique, and one of the difficulties at the very outset was that the number of people available with experience in the methods and the mining equipment to be used in such an environment was, naturally, very limited."

So unique is Syncrude's mining scheme that mining people in both the Projects and Operations areas met in September with representatives of the three oil company and three government owners to explain it. Doubts were aired and cleared during the session and the representatives saluted the company's mining efforts with plaudits.

"The presentation developed an understanding among non-mining people of what the Mining Department is doing so that co-operation and co-ordination may be promoted," said Dave Adam.

Dave, joined by teammates Rodger Bellows, Colin Chapman, Ed Flewitt, Lee Nichol, Bob Thomas and Al Vanderputten, described the work Projects had been doing in planning the mining scheme.

Diversion a milestone

"We were responsible for the design and direction of detailed engineering," said Dave. "One of the major milestones achieved by our group was the diversion of Beaver Creek. Without its diversion, the mine could not be developed."

Mine site preparation was started by the Projects people and now it's being done jointly with Operations. Access to the mining area had to be ensured and mine surfaces had to be made stable for successful operations.

This work started in late 1973 with tree clearing. Then came road building, surface draining, muskeg removal, overburden dewatering, aquifer depressurizing and surface grading.

Intensive studies have been conducted from 1970 to evaluate the stability and composition of the geological formations under the mine surface. This information is vital to the Operations side of the department so that miners will know how and where to dig with their big machines.

The challenges ahead in the operating phase of the Syncrude mine were told to the participants by Mel Farries, Assistant General Manager of Operations Mining, and teammates Walt Grochmal, Dennis Love and John Rayfield.

It will be the largest mining operation in the world when in full production, in terms of the amount of material moved — 100 million cubic yards per year.

All four draglines are now being assembled on site. The pieces for the first machine began arriving from Marion Power Shovel Company, Inc. of Ohio more than a year ago. Marion supplied two of the machines and Bucyrus-Erie of Wisconsin, the other two.

Two draglines will begin digging this summer, initially to strip off the overlying gravels, overburden, and stockpile tar sand in preparation for the plant's mid-1978 start-up. The mining machinery will be powered by electricity generated from the site power plant.

The overburden of sand, gravel, clay and shale which lies on top of the tar sand varies in thickness from zero to 50 feet. The tar sand underneath will be mined to a depth of 200 feet over the next 25 years.

The tar sand travels up onto stackers which dump it onto surge piles.

L-o-n-g booms

The $25 million draglines have booms longer than the length of football fields and buckets able to scoop up enough material to fill a large living room. In operation, the bucket, suspended by hoist cables from the boom, is dropped to the mine surface and pulled toward the machine by drag ropes winched in from the huge control house. By rotating the machine and skillfully manipulating the cables and ropes, the operator can position his bucket to dig and dump in any location. The mammoth machine itself is able to "walk" in a fashion similar to that of a very slow duck.

Marion Walking Dragline #1 taking shape.

The bucket peels off two to three feet at a time and is hoisted while the dragline swings around to dump its load on a pile called a "windrow".

The draglines are only the beginning of the transport train required to get the tar sand from the mine into the extraction plant where the heavy oil, bitumen, is separated from the sand.

Paired with each dragline is a 428-foot-long bucketwheel reclaimer which links it with the conveyor transport system. Now being assembled, the first of these reclaimers will be put into action in November and the second will be finished in a year.

The bulk of the pieces for the reclaimers have been manufactured by Great West Steel Industries Ltd. of Edmonton. Some parts are being made in Calgary; Dundas, Ontario; and in Germany.

Bucketwheel excavators are used at GCOS instead of draglines. The design capacity of the Syncrude custom-designed reclaimers will be 7,000 short tons per hour.

The 14-bucket wheel is 41 feet in diameter (GCOS's has 10 smaller buckets and is 30 feet in diameter) and will scoop up the tar sand from the windrow created by the dragline, and transport it down its 328-foot-long-bridge to a conveyor.

The scalping of oversized lumps that would cause damage to the conveying system is done where the reclaimers discharge their material onto the conveyors.

The separator is a 16-inch vibrating screen mounted on a tracked bridge which straddles the conveyor. It can be removed from the system if not temporarily needed. From the separator, the tar sand drops through travelling hoppers before being carried away on the conveyor belting.

The major supplier for the separator parts is in Germany.

17 miles of conveyors

Some 17 miles of conveyors will

ultimately be in operation around the mining area. The steelcord belting for the conveyors is six feet wide and one-and-a-half inches thick. The belting cost is $150 a foot delivered, according to Dave Adam, for an overall cost of more than $10 million.

Tar sand deposited on the belt will move in one minute the equivalent distance of more than two and a half football fields (860 feet).

The massive conveyor head stations on the face of the mine are able to be moved with the help of hydraulic walking legs. The long lengths of conveyor are shifted with the lateral help of dozers. This will allow the mine pit to be expanded as time passes.

Most of the belting is being manufactured in Bomanville, Ontario; some is being made in Germany and Japan. The walking legs come from Germany and the gear boxes were designed in California and are being assembled in Vancouver.

Stockpiling

The conveyors transport tar sand from the reclaimers to radial stackers which direct the tar sand onto what are known as surge piles, located at the north end of the mine pit, nearest the extraction plant. The pile allows the tar sand to be stockpiled to allow continuous operation by the preceding pieces of mining equipment.

The 238-foot-long stackers, which are an elevated extention of the conveyor system, are able to swing back and forth to feed various bins which take the tar sand underground into the extraction building. Mechanical and electrical parts of the stacker are exchangeable with the conveyors.

May 1, 1977

NEW HORIZONS FOR ENGINEERING PEOPLE

Engineering related to original design of the Syncrude project is now 98 per cent complete — but the Engineering staff is still 100 per cent occupied.

According to Ron Gray, Director of Engineering, the shifts of corporate emphasis from design to construction to operations, mean new areas of activity for many members of his department. For example, there is increasing involvement with field construction forces on inspections and with the Operations Department on evaluation of start-up procedures.

Preparing guides

One of the prime responsibilities of the Process Engineering Division, headed by Harold Wiggers, has been preparation of the detailed operating guides required for all process units and major utilities systems. Most of the 35 guides have now been completed. More than half have been issued and the balance are in the final printing stage.

For Bill Mowat's Mechanical Engineering Division, there has been an endless round of shop inspections and actions to resolve the inevitable fabrication problems. As well as inspecting vessels and monitoring rotating equipment in vendors' shops, the mechanical engineers are called on to provide support during field installations and, increasingly, conduct inspections of the erected equipment.

One indication of the changing role of the Engineering Department was the creation last year of a new division. Called Control Engineering, it was formed to study the whole question of data acquisition and processing systems for the Syncrude complex.

Computer control

"In the future, its major activity will be to evaluate incentives for putting parts of the plant on computer control as opposed to the present system of instrumentation," explains Ron.

A group of about 10 computer and instrumentation experts, headed by Peter Reavill, is evolving a master plan that not only looks at controlling the project in an optimum manner, but also at providing key data for the management information system.

The possibilities are virtually unlimited, but the trick is to come up with both a technically feasible and an economic system. Says Ron: "A lot of companies have gone into this sort of thing. In some cases they've had remarkable success and, in others, total flops. But in this whole learning process, a solid body of knowledge is beginning to emerge."

Since Peter was in charge of a similar section for Imperial Oil (which, incidentally, led to several successful computer installations), there's a high degree of optimism surrounding work by the Syncrude group.

Ron insists there's no plan to create a futuristic plant environment in which humans are expendable. In fact, he foresees no reduction in people once the system is in place. What he does expect to see are "improved operations — more reliable, with the capability of achieving higher yields and throughputs."

As work in this area intensifies over the next several years, staff in Engineering Control is expected to rise to 16.

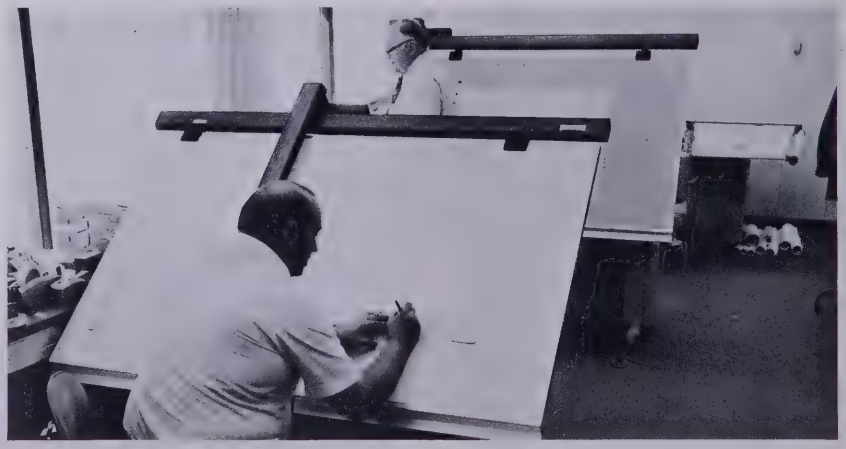
Start-up problems

With the approach of start-up, "design fix-up" becomes a priority. Ron explains this means dealing with any start-up problems that arise and making necessary modifications. On a project with so much prototype equipment, there are bound to be problems. Because of the need to achieve high production as soon as possible, resolving these problems will call for fast action — plus all the resources of the company, he says.

Once operations settle down, a series of performance tests will be conducted on the various units. These are required to provide information with respect to the guarantees of vendors, licensors and engineering firms. Performance tests also identify the potential capacity of the units or Engineering maintains a "modest effort" toward identifying the various options that exist for plant expansion.

Second plant?

At the moment, Peter Flynn is the one member of the Engineering staff assigned full time to this work. He is supported on an "as needed" basis by Mining Engineering, Process Engineering and Engineering Economics groups.



Tony Saskiw, left, and Walter Rilkoff in their engineering milieu in the Financial Building.

"There's no guarantee a second plant will be built," Ron points out," but the country's increasing balance of payments problem points to the need for additional capacity. However, it's desirable to get some initial plant performance data before finalizing any plan for expansion because the nature and size of additional units would depend on performance of equipment in the present plant."

Another continuing area of Engineering activity involves economic evaluations. Under the guidance of Frank Werth, Senior Advisor: Economics and Planning, the section carries out Engineering feasibility studies but also assists other departments in evaluating proposals for acquisition of everything from company aircraft to office space. It also assists in appraisal of purchasing options for major items such as start-up hydrocarbons, catalysts and chemicals.

"We will be using the oil sands pipeline in reverse to bring up the 700,000 barrels of gas oils and naphtha needed to start up the various units," Ron explains. Peter Ambrose, Chief Engineer: Process Design, is supervising this work.

Natural gas

Securing the necessary natural gas supply — which involves negotiating with groups of producers for long term commitments — is a task that falls largely to Ron himself. He expects all necessary contracts to be in place by the end of this year.

May 1, 1977

THE GREAT FLOOD OF '77

A lesson on brotherly love

The Great Flood of '77 experience proved one thing: when Fort McMurray people need each other, there springs a warmth few people would think capable of a northern "boom" town community.

Harley Bricker, Syncrude's Materials Superintendent in Central Mechanical Services and Fort McMurray's coordinator of volunteer services for the town's Disaster Services organization, said he got a "200 per cent effort" from townspeople volunteering their time and resources to help flood victims over the weekend of April 14-17.

"Disaster Services Director Sol Deitch said we got a 199 per cent response, but I'll go one better," said Harley.

The only Syncrude, Canadian Bechtel and Northward Developments people known to have been directly affected by the flood were the more than 100 families living in Ralph's 21 South Estates mobile home park on Franklin Avenue at 9914 Penhorwood Drive.

As far as is known, none of their homes were flooded, albeit the flood-waters from the Clearwater River rose to the top of the skirting of some. Most of the residents spent at least one night away from home — in the homes of relatives and friends, at Noreast Camp on Beacon Hill or in other accommodations.

Syncrude did not issue an official statement to flood victims over the radio, but individual departments, affiliates and persons offered housing, equipment, manpower and blankets publicly and privately to flood victims. Northward Developments, with very few furnished units to offer, told Disaster Services that flood victims could occupy newly completed townhouses. Northward employees were on call at their construction and operations offices the first night. CJOK Radio manager Judi Dicks said Syncrude Operations was the first private organization to offer aid over the air. Blankets, coffee, manpower and accommodations at Lower Camp were offered. Employee Relations people attempted to reach residents of 21 South Estates to aid them in their plight.

Syncrude Environmental Affairs transported a jet boat and an all-terrain vehicle to the town hall. Projects people offered to free large pieces of construction equipment to the town.

All the offers continued during the post-flood clean-up period.

While some residents of 21 South Estates were miffed at not hearing an official Syncrude directive over the radio, Harley Bricker said the town's Disaster Services were co-ordinating all offers of help and the town RCMP and fire department personnel were ably protecting persons threatened by the flood.

"That's what we have a town for," he explained. "The town is here to aid all its citizens in time of disaster and all offers of aid from individual firms like Syncrude are channelled through the town's Disaster Services. And that's exactly what happened."

Many of the residents of 21 South Estates are in interim accommodations. They've been in Fort McMurray only a few weeks or months and know only a few people.

The cause of the flood was that the Athabasca River was too low to carry downstream the huge chunks of ice formed by the annual break-up, which this year occurred early on Thursday, April 14.

Some of the ice chunks were thrown up on end, forming an effective dam on the river channel near Peden's Point at the confluence of the river and the Clearwater River which flows into it.

With its channel plugged, the Athabasca took the only course it could — up the Clearwater. When the Athabasca waters met an ice jam at Fort McMurray's lower townsite, the water started climbing the banks. In 24 hours the surface of the Clearwater rose 20 feet and flooded approximately half the townsite, including portions of Franklin Avenue, the main artery dissecting the town longitudinally, parallel to the Clearwater River.

In terms of dollars and the number of people and businesses affected, the Great Flood of '77 will probably be recorded as the worst ever to hit the town. That's because the lower townsite is much larger and populated than in any previous flooding of the Clearwater.

Deputy Premier and Minister of Transportation Hugh Horner announced four days after the river break-up that flood damage was estimated at $4.6 million. Some 1200 to 1500 persons in 350 homes were homeless for at least a night. Worst hit, and still inundated a week after being first flooded, was Clearwater Court, a mobile home park of 40 units. Five feet of water swamped vehicles, and garden sheds and made living in the homes impossible.

Oldtimers would be quick to point out an earlier flood; the one in April, 1936, covered more of the town area and flood victims had little recourse in being compensated for their losses. Pioneer Walter Hill, 77, was heard to say the recent flood was "just a spill." He'd seen worse.

The population of Fort McMurray in 1936 was about 600 to 700, according to Ethel Bird, who moved into town from Fort Chipewyan in 1934 and remembers the previous flood. Now the lower townsite has more than 12 times that many people. With the new "suburbs" on the river valley banks, the population of Fort McMurray is approaching 20,000.

Mrs. Bird doesn't remember another flood as great as those in '36 and '77. A flood in 1965 might rank third in recent history, she indicated.

Mrs. Bird and her 70-year-old husband Billy were living in Clearwater Court at the time of the recent flood. They estimated their loss at $30,000. Nick Lees of the Canadian Press quoted Billy as saying, "I feel silly being caught like this. I spent 51 years on the river and should have known better."

Not just another spring river break-up.

Disaster Services co-ordinator, Harley Bricker, was first alerted to the possibility of flooding at 9:45 a.m. on April 14, just three hours after the official break-up of the Athabasca. Fifteen minutes later, he was picked up by an RCMP helicopter at Lower Camp to survey the situation at the junction of the two rivers.

Harley wasn't to get any sleep the following night; and only three hours on each of Friday and Saturday night. On Sunday night he went to bed at 6 p.m.

He said he wasn't officially called to action until Thursday night when Mayor Chuck Knight declared a state of local emergency. He and assistant co-ordinator Helmut Beich, an employee of Great Canadian Oil Sands, were asked to co-ordinate the efforts of volunteers by Sol Deitch, the town's full-time director of Disaster Services. Having no volunteers on staff, they had to appeal via CJOK Radio.

Harley joined Disaster Services as a volunteer three years ago, while an employee of GCOS. He joined Syncrude in late 1975, but spent the first 10 months working in Edmonton with a leave of absence from Disaster Services. The last local disaster Harley was involved in was the evacuation of Anzac residents more than a year ago when there was a gas leak from the nearby Amoco plant.

Family rescues belongings via rowboat.

Most of the flood victims stayed with relatives and friends, according to Al Hudkins of Alberta Health and Social Services which was operating out of the Keyano College gymnasium. Only 130 persons had signed up for assistance — meals in the Keyano College cafeteria and beds at Noreast Camp in Beacon Hill — by 6 p.m. Friday. Homes were offered by Northward Developments, Athabasca Realty, Keyano College and more than [illegible]red families.

CJOK Radio kept its facilities and some of its people going all night on Thursday to aid emergency operations within the town. Announcements by the RCMP, who were keeping curious bystanders out of the stricken areas to facilitate movement of families out of the threatened areas, and the fire department, who attempted to keep people informed as to the threat of flood waters rising in their areas and helping them to evacuate if needed, were aired on the radio station.

Radio newsman Kelly Christiansen was awake for some 48 hours while aiding the emergency operations. He caught some sleep on Friday and then left the town for repose.

A call for all dump truck owners to carry gravel and soil to make earth dikes to head off flood waters was immediately answered, in 10 minutes by some 25 truckers.

Most of the Syncrude, Canadian Bechtel and Northward Developments people living in 21 South Mobile Home Estates left the area on Thursday night. Most returned home Friday, albeit some had to wade in water to do so. By Saturday most were back.

No water entered any of the mobile homes. In some cases, it was reported that some homes would have been flooded, had the waters risen another couple of inches.

At least one mobile home was occupied during the entire flood period.

Ed Larson of Unit #123, an assistant supervisor of equipment for Canadian Bechtel at the Syncrude project, said he had no place to go and decided to take his chances on having the flood waters rise enough to enter his home. He drove his car through a torn-down portion of the fence separating the mobile home park from Keyano College to safeguard his automobile. Ed came 10 months ago from Montreal.

Ed's girlfriend, Sharon Eldridge, a Bechtel teamster in Upgrading, was unable to approach her home two rows closer to the rising river water. So she and two girlfriends stayed with Ed in his house. Ed is single and had no children to worry about. Sharon, however, has two children whom she farmed out the first night with friends downtown.

Most families with children chose to heed the warnings of the fire department personnel and leave the area at least for a night. John Primmer, of Unit #30, a contract instrument inspector for Syncrude Projects, just four weeks out of Toronto with his wife Hildegard and two boys and one girl aged 15 to 9, stayed one night at Noreast Camp, billeted there by provincial Social Services.

By Saturday morning, the waters had receded enough to allow foot approach to their home, but they were attempting to fill in the large puddles around their home with sand and make a bridge to their front door. Their home was one of the lowest in the mobile home park and, while the waters ruined the skirting around their home, the water did not enter their home. Two inches higher and the "smelly" water would have been into their home, John said. Down the same street, in Unit #34, live Wayne and Ann Hill. Wayne, is an inspector on contract to Syncrude Projects. They evacuated with most of the others and stayed in Noreast Camp like the Primmers. The Hills came two weeks earlier from Hamilton.

Back toward the dryer part of the mobile home park lives Hank Demark, his wife and three children aged 2, 4 and 7 in Unit #142. Hank, an inspector with Northward Developments, works in Area One. He and his family spent Thursday night in a construction trailer in the new housing development. They shared it with Tom Savage, another Northward inspector, and his wife and two children aged 2 and 6.

"We didn't really have to leave at all," he felt, "but Northward wanted all their trucks out of the area, so we left for the night."

Hank could have stayed in one of the newly carpeted townhouses in Abasand Heights or stayed in the home of Northward member Doug Tannahill.

The Demarks are eight weeks out of Belleville, Ontario.

Bob Reivonen, a Bechtel safety man retired from military services in Ontario since September, summed up the lot of those living in Ralph's 21 South Mobile Home Estates: "Nobody will have to claim for the loss of anything here; we just had to suffer a lot of inconvenience."

Bob, his wife and three children aged 13 to 8 spent Thursday night in the home of fellow Bechtel safety man Don Lyons on Grey Crescent in Area 6.

"We were going to take a motel room, but the Toronto-Dominion Bank was closed on Friday and, besides, we heard all the hotel and motel rooms in town were filled that night."

Bob said it would have taken another two feet of water to come up to his front door.

Water flooded the streets of the 15-block commercial and light industrial area in the southeast portion of town. Clearwater Building Supply, just over the rail from the Clearwater shoreline, suffered many thousands of dollars worth of damage to lumber, some of which was seen floating down the streets as far as two blocks away.

The office of the town's only newspaper, Fort McMurray TODAY, on Centennial Drive, was flooded. Employees there stayed late on Thursday and frantically lifted papers,

invoices and news copy onto desks and counters. Editor Peter Duffy returned to Fort McMurray Saturday morning to witness the aftermath. He saw that half his newsprint was damaged, but he expected to put out a paper on Monday, and they were back in operation that day.

On Saturday afternoon the members of Disaster Services met and decided that the danger was not passed and recommended that those residents affected by the flooding stay away from their homes until further notice.

The flooded east side of town, along the Clearwater River.

They reported that the river had receded four to five feet since the peak on Friday. A 600-pound dynamite blast had cleared a channel in the Athabasca and was responsible for the receding waters. Alberta Government contract blasters repeated dynamiting on the following Sunday and Tuesday.

A flood compensation office was set up in town on Tuesday and victims were told they would be able to claim up to 80 per cent of their losses to the province. The municipality would be reimbursed 100 per cent.

June 15, 1977

NORTHWARD TOPS OFF McMURRAY'S FIRST HIGHRISE

Topping-off ceremonies for the tallest apartment building in northern Alberta occurred June 2 in Fort McMurray. Some 150 invited guests were on hand to witness the pouring of the final bucket of concrete.

Built by Northward Developments Ltd., the 13-storey structure is part of the overall housing project to supply accommodations for Syncrude members.

Now only a concrete shell, the 130-foot building will contain 100 two-bedroom suites and 49 one-bedroom suites. Occupancy will begin in October, with final completion set for December 15. Construction started last September.

Located at the north end of Franklin Avenue by MacDonald Island, this is one of the two towers under construction in Phase One of a development that will supply 500 residential units at a cost of $26 million. The other tower will contain 144 suites and commercial space on the main floor. The second tower is expected to be topped off in September.

Also included in the housing complex, named River Park Glen, will be a four-storey building containing 60 two-bedroom suites, 35 three-bedroom suites and a one-bedroom suite, as well as 49 three-bedroom townhouses built at grade level and 62 units built above a parking structure. Parking space will be provided for 680 vehicles and slightly more than half will be under cover.

Phase One of this project includes a leisure centre, housing a swimming pool, an exercise room, an arts and crafts room, day care facilities and a lounge area.

Phase Two will see an expansion of these facilities and a third 13-storey apartment tower. No construction date has been established.

Situated on 19.7 acres, the combined structures will occupy only a quarter of the site, leaving the balance for parking and landscaping. The total cost of the housing project is estimated to be $40 million.

The 500 units in Phase One will provide about one fifth the total units to be built by Northward. Work is progressing at a dramatic rate for approximately 1100 apartment, townhouse and patio home units in Abasand Heights above the lower townsite. Nearly all the other units in Beacon Hill and Thickwood Heights, most of these single family detached homes and townhouses, have been completed.

Not all the 150 persons who witnessed the topping-off ceremonies were perched on top of the building. All but two dozen were situated on the fourth floor and viewed the 15-minute-long event on four closed circuit television monitors set up for the occasion by ABC Cable and Northward. The ceremonies were rebroadcast on local channel two on the evening after. CJOK Radio provided a public address system on the fourth floor.

Looking south across the Fort McMurray lower townsite. River Glen Park is in the foreground and the first apartment tower is at the left.

Thick raincloud threatened to cancel the pouring of the last bucket of concrete. In fact it had been raining during the morning, but luckily the clouds began to break up before the event, much to the relief of the prime organizers — John Elson, Syncrude Vice President of Housing and Urban Development; Perry Dagsvik, Northward Construction Manager over Riverlot 5; and Tony Koopmans of Northward's Developments office in Edmonton.

Master of ceremonies was John Elson. Chosen to do the honors of dumping the large crane bucket full of cement into a framed rectangular area on top of the tower structure were Frank Spragins, Syncrude's Chairman of the Board of Directors, and town mayor Chuck Knight.

With microphone in hand and speaking into a breeze, John began the 15-minute ceremonies by addressing the dozen dignitaries at his side, including Vic Henning, Commissioner to Northeastern Alberta; B.J. Wensley, building architect; Jack Shields, president of the local Chamber of Commerce; and Lloyd Bergman, the building contractor, all of whom had signed their names in green on Fort McMurray dollars and were waiting to throw them into the last patch of concrete "where they would remain forever," according to Syncrude's Vice President of Housing.

"Gentlemen," began John, "we're now about to hoist the bucket of concrete representing the topping off of this building. This accomplishment represents part of a very significant commitment to Alberta and Fort McMurray."

Appreciation was expressed to all staff, consultants, contractors, provincial and municipal departments and agencies who helped make the building possible, and, in particular, Alberta Home Mortgage Corporation, which has provided primary financing.

John then turned the microphone to Frank Spragins, who, in his usual style, put an interesting historical note on his brief remarks. But not before he singled out one man to honor.

"I think the first thing I should do is to congratulate John Elson in bringing this great event to pass," said Frank. "This dream first started about five or six years ago when a group proposed a highrise on this site and came up with some very beautiful architectural drawings."

"Syncrude thought this was great and we included it in our recruitment brochure. That plan failed and we had to quickly revise the printing of our brochures. Now it's finally come to pass and it has at least made us honest. Congratulations to all who've had a part in this great structure."

Next to speak was Mayor Knight, who said the apartment building represented physical evidence of Fort McMurray's emergence into the ranks of the larger provincial municipalities. He also had praise for Northward and Syncrude.

The dozen dignitaries completed the ceremonies by tossing their McMurray dollars into the concrete slab.

"The cost of the project has just increased $12," quipped John.

Spectators line the dragline's 72-kilovolt "extension cord" as the boom spins around overhead.

June 15, 1977

BIG RED MONSTER TAKES FIRST STEPS

Syncrude's number one dragline walked on Victoria Day, May 23, signalling the successful completion by Canadian Bechtel of what will be the most visual component of the tar sand plant.

On that same day, the 6,500-ton mining machine was officially turned over to Syncrude by Canadian Bechtel. Operations Mining had already checked out the dragline and gave Projects Mining the okay two days before.

It took 16 months to assemble the pieces manufactured and sent by Marion Power Shovel Co. Inc. of Marion, Ohio. The completion was ahead of schedule by a couple of weeks. The 360-foot boom was tested on May 11, almost two weeks before the walking day.

Some 200 persons were at the Marion construction pad by the Mine Services Building to witness the historic test steps. For the technical people intimately involved with the construction and testing of the dragline — Syncrude Projects and Canadian Bechtel construction people and the Operations members—there was no doubt the machine would perform as designed. But, for those "laymen" present, the dragline walk was something wondrous to behold. It was breathtaking to see a machine so big, so complicated in design, perform so well — just like the mining people said it would.

The dragline walk was delayed two hours by threatening raincloud which finally passed over at 3 p.m. Before the cloudburst hit, spectators were treated to a demonstration of how well the machine could manoeuvre in place. The two-storey, garage-sized bucket was hoisted up and the huge rotating frame control house spun the boom around a few times overhead. At the controls was Jim Brennan from the Marion company.

After the rainshower, Mr. Brennan began walking the dragline. After a short distance from the pad, the controls were shared by Syncrude's dragline operator trainer Walter Jackson. Also assisting in the "shakedown" procedures was Harry Winkel of Bucyrus-Erie Inc., manufacturers of two of Syncrude's four draglines.

They marched the machine 800 feet to the fringes of the mine area.

The dragline walked on two 80-foot-long steel "shoes" which rotated around eccentric shafts. The steps occurred every 40 seconds, in the opposite direction from the boom. The shoes did not lift the entire dragline off the ground, only the front end of the circular tub which forms the base of the dragline. With each step, the tub slid forward about six feet for a speed of 0.14, or one-seventh, of a mile per hour. Between steps, the tub rested on the ground, waiting again to be lifted by the shoes.

The mining machine was not without "bugs", however. On May 27, the dragline was walked again, but the big red monster got a sore foot — a shoe bearing had to be operated on before it could walk again, delaying another walk by a week or two.

Syncrude's number two dragline, manufactured by Bucyrus-Erie of Wisconsin, is scheduled to be finished on Aug. 1. Both draglines will be removing the overburden in the initial mining strip, preparatory to mining the tar sand in early 1978.

Syncrude and Canadian Bechtel Construction Managers John Lynn, left, and Ken Clarke, right, and Projects Mining Assistant Construction Manager Faiz Rehman view with pleasure the testing of the dragline.

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